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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------------|------------------|
| 10/757,128  | 01/14/2004  | Eric J. Glover       | 03009                           | 3825             |
| 20844   | 7590        | 07/07/2006           | EXAMINER<br>PONIKIEWSKI, TOMASZ |                  |
| NEC LABORATORIES AMERICA, INC.<br>4 INDEPENDENCE WAY<br>PRINCETON, NJ 08540 |             |                      | ART UNIT<br>2165                |                  |

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                |                               |  |
|------------------------------|--------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/757,128  | Applicant(s)<br>GLOVER ET AL. |  |
|                              | Examiner<br>Tomasz Ponikiewski | Art Unit<br>2165              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/14/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

1. Claims 1-30 are pending.

#### ***Specification***

##### ***Abstract***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The first line of the abstracts states "are disclosed". It is not proper abstract language. See above. Appropriate correction is required.

3. The disclosure is objected to because it contains an embedded hyperlinks on page 1 of the specification. Applicant is required to delete the embedded hyperlinks. See MPEP § 608.01.

4. On page 17, lines 8 and 9 of the specification the applicant recites copending applications 10/677579 and 10/494939 followed by titles. The serial numbers for both co-pending applications are not correct. The examiner believes that the serial numbers should be 10/677,779 and 10/404,939 respectively.

#### ***Claim Objections***

5. Claims 1, 20 are objected to because of the following informalities: the recitation of "such that" on line 8 indicate intended use and should be changed to "which" or "wherein". Appropriate correction is required.

Claims 1, 12, 19, 20, and 30 are objected to because of the following informalities: the recitation of "can be" in the body of the claims indicates an option; it should be changed to "is" or "are". Appropriate correction is required.

Claim 29 appears to have a misspelling, since it can not be dependant on itself. Correction is required.

#### ***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1, 13, 20, 24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

To be eligible under 35 USC 101, claims should be directed to physical transformation or a practical application established by a useful, concrete and tangible result.

Claims 1, 13, 20 and 24 list computational steps in a program without tangible, useful, concrete result because they do not specify an output at the end of the claims. It is unclear what the end result of the steps of the claims is.

Claims 20, and 24 recite the word “for” in the preamble. It indicates intended use and as such does not carry patentable weight. The limitations following the phrase “for” describes only intended use but not necessarily required functionality of the claim. Limitations following the phrase “for” do not carry patentable weight, which cause the claims to appear as a series of non-functional descriptive material/data without any functional relation with each other. Claims should be amended to recite “to” or “that”.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 2, 4, 6, 21, 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 21 recite "explained by determining" in line 2. The usage is vague and indefinite claim language. The examiner suggests a change to "is determined" or "is found".

Claims 13 and 24 recite "automatic query expansion" in the preamble. There is no nexus between preamble and the body of claim because "automatic query expansion" is never realized in body of the claim.

Claim 4 recites the limitation "the composite score" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 and 23 recites the limitation "the expanded results" in line 1. It is unclear which results is the recitation referring to, the first or the second. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 and 23 recites the limitation "the query concept" in line 2. It is unclear which concept is the recitation referring to, the first or the second. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-7, 9-10, 13-14, 16-17, 20-25, and 27-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Syeda-Mahmood (US 6,578,040).

As per claim 1 Syeda-Mahmood is directed to a computer-implemented method to search for data responsive to first and second query concepts, comprising:

receiving a first set of expanded results generated from a first query concept by utilizing one or more data sources (column 3, lines 17-18, wherein "data sources" could mean "slides");

receiving a second set of expanded results generated from a second query concept by utilizing the one or more data sources (column 3, lines 18-19, wherein "data sources" could mean "video");

and determining an intersection set of documents from the first and second sets of expanded results, such that a relationship can be determined

between the first and second query concepts from the intersecting set of documents (column 3, lines 19-21).

As per claim 2 Syeda-Mahmood is directed to the relationship between the first and second query concepts is explained by determining for each document those concepts related to the document from a larger concept set, the larger concept set including expansions of the first query concept and the second query concept (column 3, lines 15-16).

As per claim 3 Syeda-Mahmood is directed to a first relevance score is assigned to the first set of expanded results and a second relevance score is assigned to the second set of expanded results and wherein a composite relevance score is assigned to the intersection set of documents (column 3, lines 48-51).

As per claim 4 Syeda-Mahmood is directed to the composite score is assigned by multiplying the first and second relevance scores (column 11, lines 27-28, wherein “combining” could mean “multiplying”).

As per claim 5 Syeda-Mahmood is directed to the documents are filtered by a relevance score (column 11, lines 4-8).



As per claim 6 Syeda-Mahmood is directed to the expanded results are generated by:

defining a first set of documents relevant to the query concept, the first set of documents being a subset of a collection set of documents (column 3, lines 58-59; column 4, lines 25-26);

building a first histogram of features from the first set of documents (column 8, lines 63-64);

and selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents (column 8, lines 64-67).

As per claim 7 Syeda-Mahmood is directed to the features in the second histogram are a baseline expansion feature set and the features for the expanded feature set are selected by removing features from the baseline expansion feature set based on how often the features appear in the first histogram (column 8, line 64, wherein "baseline expansion feature set" could mean "corresponding slide images"; column 9, lines 1-7; wherein the set threshold could mean that features that fall below set threshold are removed).

As per claim 9 Syeda-Mahmood is directed to the expanded feature set is ranked by expected entropy loss (column 10, lines 20-31; column 11, lines 7-9).

As per claim 10 Syeda-Mahmood is directed to concept constraints are applied to the expanded feature set (column 11-23).

As per claim 13 Syeda-Mahmood is directed to a computer-implemented method for automatic query expansion comprising:

defining a first set of documents relevant to the query concept, the first set of documents being a subset of a collection set of documents (column 3, lines 58-59; column 4, lines 25-26);

building a first histogram of features from the first set of documents (column 8, lines 63-64);

and selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents (column 8, lines 64-67).

As per claim 14 Syeda-Mahmood is directed to the features in the second histogram are a baseline expansion feature set and the features for the expanded feature set are selected by removing features from the baseline expansion feature set based on how often the features appear in the first histogram (column 8, line 64, wherein "baseline expansion feature set" could mean "corresponding slide images"; column 9, lines 1-7; wherein the set threshold could mean that features that fall below set threshold are removed).

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As per claim 16 Syeda-Mahmood is directed to the expanded feature set is ranked by expected entropy loss (column 10, lines 20-31; column 11, lines 7-9).

As per claim 17, Syeda-Mahmood is directed to concept constraints are applied to the expanded feature set (column 11-23).

As per claim 20 Syeda-Mahmood is directed to a computer-readable medium storing instructions to search for data responsive to first and second query concepts, the medium comprising instructions for:

receiving a first set of expanded results generated from a first query concept by utilizing one or more data sources (column 3, lines 17-18, wherein "data sources" could mean "slides");

receiving a second set of expanded results generated from a second query concept by utilizing the one or more data sources (column 3, lines 18-19, wherein "data sources" could mean "video");

and determining an intersection set of documents from the first and second sets of expanded results, such that a relationship can be determined between the first and second query concepts from the intersecting set of documents (column 3, lines 19-21).

As per claim 21 Syeda-Mahmood is directed to the relationship between the first and second query concepts is explained by determining for each

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document those concepts related to the document from a larger concept set, the larger concept set including expansions of the first query concept and the second query concept (column 3, lines 15-16).

As per claim 22 Syeda-Mahmood is directed to a first relevance score is assigned to the first set of expanded results and a second relevance score is assigned to the second set of expanded results and wherein a composite relevance score is assigned to the intersection set of documents (column 3, lines 48-51).

As per claim 23, Syeda-Mahmood is directed to the expanded results are generated by:

defining a first set of documents relevant to the query concept, the first set of documents being a subset of a collection set of documents (column 3, lines 58-59; column 4, lines 25-26);

building a first histogram of features from the first set of documents (column 8, lines 63-64);

and selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents (column 8, lines 64-67).

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As per claim 24 Syeda-Mahmood is directed to a computer-readable medium storing instructions for automatic query expansion, the medium comprising instructions for:

defining a first set of documents relevant to a first query concept, the first set of documents being a subset of a collection set of documents (column 3, lines 58-59; column 4, lines 25-26);

building a first histogram of features from the first set of documents (column 8, lines 63-64);

and selecting features for an expanded feature set by comparing the first histogram of features with a second histogram of features from the collection set of documents (column 8, lines 64-67).

As per claim 25 Syeda-Mahmood is directed to the features in the second histogram are a baseline expansion feature set and the features for the expanded feature set are selected by removing features from the baseline expansion feature set based on how often the features appear in the first histogram (column 8, line 64, wherein "baseline expansion feature set" could mean "corresponding slide images"; column 9, lines 1-7; wherein the set threshold could mean that features that fall below set threshold are removed).

As per claim 27 Syeda-Mahmood directed to the expanded feature set is ranked by expected entropy loss (column 10, lines 20-31; column 11, lines 7-9).

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As per claim 28 Syeda-Mahmood is directed to concept constraints are applied to the expanded feature set (column 11-23).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 8, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Syeda-Mahmood (US 6,578,040) in view of Guyon et al. (US 2003/0172043).

As per claims 8, 15 and 26 Syeda-Mahmood does not teach the baseline expansion feature set is generated by training on a random data sample.

Guyon et al. does teach baseline expansion feature set is generated by training on a random data sample (Guyon et al., page 18, paragraph 0206, lines 4-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Syeda-Mahmood by teachings of Guyon et al. to include generating a set by training on random data sample because it's a well know technique useful for elementary comparisons.

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14. Claims 11-12, 18-19, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Syeda-Mahmood (US 6,578,040) in view of Mauradian (US 5,943,663).

As per claims 11, 18, and 29 Syeda-Mahmood does not teach a feedback scoring function is applied to results generated from the expanded feature set.

Mauradian does teach a feedback scoring function is applied to results generated from the expanded feature set (Mauradian, column 15, lines 54-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Syeda-Mahmood by teachings of Mauradian to include feedback scoring function is applied to results generated from the expanded feature set because user may need to specify their preference (Mauradian, column 15, lines 50-51)

As per claims 12, 19, and 30 Syeda-Mahmood does not teach the feedback scoring function assigns a fixed score to each feature and where feature can be assigned different fixed scores.

Mauradian does teach the feedback scoring function assigns a fixed score to each feature and where feature can be assigned different fixed scores (Mauradian, column 15, lines 54-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Syeda-Mahmood by teachings of Mauradian to include the feedback scoring function assigns a fixed score to each feature and

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where feature can be assigned different fixed scores because it may depend on task on hand (Mauradian, column 15, lines 58-62).

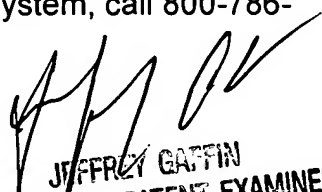
### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tomasz Ponikiewski whose telephone number is (571)272-1721. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on (571)272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tomasz Ponikiewski  
June 30, 2006

  
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